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ABSTRACT

This document reviews research findings on criteria used to determine age of entry into first grade. Criteria discussed include chronological age, mental age, I.Q., sex, and physical development (teething, visual development, etc.). In general, the research reviewed supports later entry, especially for children with below average intelligence. For the child of normal intelligence, a chronological age of 6 years 6 months is recommended. Earlier or later entry should be determined by how well a child would perform in relation to normal children 6 years 6 months old. It is suggested that children profit from waiting until they are able to perform at an average or an above average level. It is concluded that no one criterion of those reviewed is effective in judging the appropriate age of entry, but that the total configuration of each child's development be reviewed in making a decision. Recommendations are made on the role of principals, parents, and teachers in assuring that children enter first grade at an age that best suits their own individual needs. (SB)

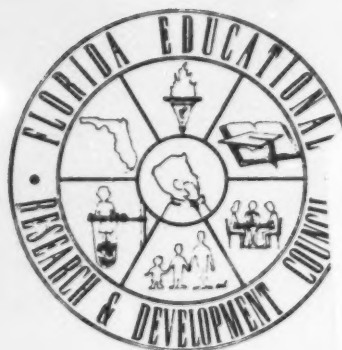
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WHEN SHOULD PARENTS
DELAY ENTRY OF THEIR CHILD
INTO THE FIRST GRADE

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WHEN SHOULD PARENTS DELAY ENTRY OF THEIR
CHILD INTO THE FIRST GRADE

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FOREWORD

When Should Parents Delay Entry of Their Child Into the First Grade? This bulletin places emphasis on helping the "parents" make this crucial decision.

Since all of us parents have children who are geniuses - or at least we think they are - it is important that the parents are helped to understand the implications of early entry on the child's attitudes toward education.

But how do you advise parents on this issue? What information can you provide that will help them understand what is involved in early entry? This is the purpose of this bulletin. Not only has Dr. Hedges reviewed research on chronological and mental age, intelligence quotient, sex, visual development, physiological development, and emotional independence, he has presented the implications in a readable, easy-to-understand manner.

I believe this bulletin can be a valuable aid to school people responsible for meeting with parents who are eager to get their child into first grade before he/she may be ready.

On behalf of FERDC, I congratulate Dr. Hedges on an important task well done.

Fall, 1976

W. F. Breivogel, Ed. D.
Executive Secretary

When Should Parents Delay Entry of Their Child into the First Grade

Each year, principals encounter children who are legally eligible to enter the first grade. However, many of these children, as both principals and teachers have learned from sad experience, are too immature to cope and should have six months to a year or even more of additional kindergarten type experiences. These children are unready for two major reasons: (1) the first grade in the United States, for the most part, has acquired the norm of introducing all children into more-or-less structured reading experiences, and (2) healthy, basically normal children vary widely in their rates of growth and development. In addition, there are those youngsters, younger than the legal entering age, whose parents are pressing for exceptions to be made. Also, most recently, the numerous early intervention programs designed to assist children to develop optimally within their own individual maturation schedules have led some parents to believe that early entry into first grade is automatically good. Some have even come to believe it will contribute towards the solution of the reading problem.

Whatever the reasons, a significant percentage of these early-entering children will not meet with

success, i. e., will not learn to read during this first year or in other ways will find themselves unable to cope. In the process, and of crucial significance, numbers of these children will acquire negative attitudes towards the reading act--attitudes that will be difficult if not impossible to eradicate.

On what bases do principals and teachers counsel parents to delay? What does the research say about criteria such as chronological age, mental age, intelligence quotient, sex, visual development, physiological development including eye-hand coordination and emotional independence, i. e., the ability to be away from home and mother for hours each day? Are there guidelines to which the principal can refer with a high degree of assurance? It is with questions such as these that this monograph is concerned.

All the research that could be located dating back to the 1920's up through the present including some 300 articles, research monographs, reviews of the research, ERIC documents and a dozen dissertations has been examined. This review is in the process of being published.* The purpose here is to distill some of the major findings for the guidance of principals, teachers, and parents as they endeavor to make the decision which will be best for each child.

There are some very clear implications from the research on the large numbers of basically

*This information is on page 19, last paragraph.

normal children. Unfortunately, these findings have been reported in ways which have made them appear conflicting and inconclusive. Specifically, the research on the truly gifted child has been mixed in with research on the normal child. There is but a tiny fraction of our population gifted intellectually who, in addition, are unusually well advanced for their age physically, socially, and emotionally. The research on these children clearly suggests intellectual stimulation and advancement at a rapid rate. We are not dealing here with that body of research. We are dealing with the research on that vast middle range of children, over 90%, who are not at either extreme of the continuum in intellectual ability and who, in addition, have no specific physical or emotional disabilities. Findings very strongly indicate that at least one-fourth, perhaps even more, of these children are entering the first grade too soon for their own best interests. This amounts to at least four or five youngsters per first grade classroom--on the average. This conclusion is supported not only by more recent researchers such as Ilg and Ames of the Gesell Institute but by research dating back to Cole in 1918 with dozens of studies in between. For example, Ames et al. (1972), in their book entitled Stop School Failure, list the chief causes of school failure; the major one given is: "Children who are immature for the grade they are in." Even more recent documentation of this position is provided by Moore and Moore in their 1975 book entitled Better Late Than Early. However, let's examine some of the research on specific criteria.

The Criterion of Chronological Age (CA)

Brenner and Stott (1971) reported a study by the Merrill-Palmer Institute on school readiness: "The clustering out of the CA factor is significant. It forces us to re-examine our position with regard to the role of CA, particularly in the light of the academic devaluation of CA as it has developed over the last years because of the emphasis on individual differences. Notwithstanding this emphasis on individual differences, it makes sense to give weight to the role of CA in the readiness of a child. Common sense, observation, and research force upon us the notion that growth, maturation, development, and learning take place through time. The longer a child has lived, the more he has had contact with reality and has accumulated knowledge and experiences. The longer he has lived, the greater are the chances that he has developed or perfected his physical and cognitive skills. The older the child, the more he will have developed emotional security, independence, social responsibility, task orientation, and motivation to learn . . ." ¹⁰

Hall (1963) reviewed much of the research and ". . . found that the studies generally were of two types. One type compared the achievement of two groups within the normal range of population. The findings of these studies generally indicated: first, the older a pupil was at entrance, the greater his chances of success academically, socially, and emotionally; second, the higher the mental age at school entrance, the better the chances of success; third, factors other than age and intelligence played a role in determining success."

"The second type of study compared the achievement of selected pupils who were admitted early. The findings of these studies generally indicated: first, that pupils who entered early on the basis of high scores on intelligence or mental-age tests achieved above the level of those who were not allowed to enter early; second, bright children who entered early had more than the average number of social and emotional problems in secondary school." Other studies and articles such as those by Carter, Braga, Ames, and Moore and Moore could be quoted, but the thrust of these studies is that many of our children are too young to do as well as they would by waiting. Six months to a year of additional time at this young age moves the child along considerably in his physical, emotional, and mental development. The parent who is concerned his child be happy and feel most secure in the tasks that confront him would do well to think about this.

The Criterion of Mental Age*

Mental age is in less high repute today than it has been for many years. In part this is because it is a global concept not precisely describable. It is being replaced with more specific, precise and measurable developmental behavioral type data. Still, for over 50 years, study after study reports it as an important criterion of first grade readiness. This plus the fact that it is tied in with chronological age and IQ makes some of the research well worth citing here.

$$* \text{M. A.} = \frac{\text{IQ} \times \text{CA}}{100}$$

As far back as 1927, Reed (1927) wrote: "The findings of research as herein reviewed thus indicate (1) the mental age factor is the best single index of a child's readiness to do first grade work." Even earlier, Cole (1918) went so far as to recommend admitting children essentially on the basis of mental age and indicated the mental age should be 6 years. Between then and now, numbers of researchers have concluded a mental age minimum of 6 years 6 months is needed. These include Bigelow (1934), Armstrong (1938), Handy (1938), Dean (1939), Hausman (1940), Hildreth (1946), Devault (1957), Hampleman (1959), Meyer (1961), Weinstein (1968), and Moore and Moore (1975).

A few researchers have recommended mental ages of from 6.0 years to 6 years 6 months. However, researchers reveal a high degree of unanimity among them that an entering mental age of 6 years 6 months is optimal for most normal children. This conclusion has startling implications! It means that every child with a chronological age of less than 6 years 6 months and an IQ of less than average, i.e. 100, does not have the minimum recommended mental age. This means that close to one-half of our children are entering school too soon and suggests the earlier figure of one-fourth is conservative. Florida school districts, for example, allow children to enter first grade if they are 6 years old by January 1. This means a child could be as young as 5 years 8 months. To have a mental age of 6 years 6 months his IQ would have to be 115.

Couple the above with the fact that Educational Research Service in its 1975 issue reported: "(1)

The most frequently reported minimum age for children to enter first grade in the fall is 6 years of age on or before January 1.¹⁶ This indicates that many states, not just Florida, commonly allow children to enter first grade as young as 5 years 9 months - some even earlier. Unless these children are entered into a nongraded primary or some other form of school organization which provides for them "where they are", is it any wonder we have as many failures as we do? For these younger ones, if they are of high ability, one researcher, Ahr (1967), even suggests an extrapolated and estimated mental age of 7 years 0 months.

It should be noted that no minimum or floor of mental age has been absolutely established: We are speaking here of a probability factor. One should always deal with each child on an individual basis in making decisions. However, as one criterion, it is clear that mental age, defined as the product of chronological age and IQ should be approximately 6 years 6 months for the majority of children, other factors being comparably developed. Translated into practice, this means that I, as a parent, would have serious reservations about entering my child into a typical first grade if his birthday came after April 1 of the year he was to enter--unless he clearly was above average in his physical coordination, mental ability, and social and emotional skills.

The Criterion of IQ

The author is fully cognizant of the numerous misinterpretations, biases, distortions, and

misapplications of tests of intelligence and the general disrepute into which they have fallen in the eyes of school officials and parents. Too, it is clear that these tests do not accurately assess the native intellectual aptitudes of many minority children. However, the fact remains that there are millions of children for whom these tests are not biased. Furthermore, it is a fact that scores on these tests tend to correlate very, very highly with the major emphasis in primary school, i. e., growth in verbal facility especially learning to read. That is, these tests do tend to predict those children who will do well in what it is the schools emphasize, i. e., verbal and quantitative skills.

With the above cautions in mind, I can state firmly and unequivocally that almost no child of below average measured IQ, assuming he is not a minority student*, should be entered into the more-or-less traditional first grade until he is 6 years 6 months old chronologically and most probably not until he is 7.0 years old. This statement excludes the gifted and the EMR. As a matter of fact, to maximize the probability of his success, the child of 5 years 9 months should have an IQ of 110 or over. This statement is supported by careful researchers such as Bigelow (1934). Even for the very bright, Halliwell (1966), in reviewing the research on the effects of early entry into first grade, wrote: ". . . the very bright, IQ over 130 profit the least from early entrance."

*If the youngster is from a minority group, he is apt to have an additional set of handicaps unless the school has the resources to work out a special program that recognizes his unique needs.

That IQ is a ratio of mental age to chronological age is well known. That it is not a single factor is also well known.

It is recognized that intelligence tests are, to some extent, misnamed because they do not reveal how intelligently people behave; rather, they give an indication of how well the children will perform in reading and arithmetic.

In an early study, Bigelow found that children of average IQs below 110 on two administrations of the Kuhlman-Anderson and less than 6 years of age upon admission to first grade had small chance of success.⁷ Twenty years later, Forester studied the records of 500 children through high school to find that the very bright, very young had a higher incidence of difficulty than the very bright, slightly older children.¹⁷ Baer found that children with average IQs of 111 tended to do average work when admitted to school underage.⁵ With this information at hand, he raised the question of whether average work is good enough for above average children. That is, is it worth it to have your bright but very young child do only slightly above average work when, by waiting, his work would be considerably above the average for his grade's norm?

This latter point is frequently overlooked, i. e. very bright, very young children can and often do accomplish above average work, but their work is only slightly above average when, if they had been a year older, it would probably have been well above average. Parents need to address themselves to this question in debating early entrance for their child.

In his dissertation, Dewitt found: "When compared to the achievement of the older child of comparable intelligence, the younger child's scores on achievement tests remain in an inferior position throughout the elementary school."¹⁵

As with the others, IQ by itself must be recognized as an insufficient indicator. It should be supported by other indices of behavioral development which are well advanced for the child's chronological age. In effect, while young, very bright children may be ready for first grade early, they may not be, and the younger they are chronologically, the less probable it is they are ready.

Sex as a Criterion

There have been dozens of studies on this problem. Some, as Ames and Ilg, find the majority of their reading problems to be male and attribute this to the immaturity of the boys. Much of this research on sex differences is reviewed in the 1969 Encyclopedia of Educational Research by Tyler.³⁵ Tyler supports the widely known idea that girls tend to develop biologically more rapidly than boys during their first 8 or 9 years. Whether this physical development correlates highly with intellectual development is less certain. What is certain, she wrote, is that girls of the same age tend to do better than boys in the early grades. Also, she said, it is certain that the differences within each sex are greater than the differences between them. Thus, automatically recommending that boys enter first grade later than girls would not solve the problem; it would do some boys and some girls an injustice.

Once again, it boils down to an individual decision for each child. It can be said, however, that, statistically speaking, boys are less likely than girls to be ready for the traditional reading tasks of the usual first grade. Some of the more impressive researchers, such as Pauley who studied thousands of children over many years do recommend earlier entrance for the girls. Pauley wrote: "Much of the research in sex differences indicates that girls should be admitted at least three or more months younger than boys; or, better that the entering age for boys should be raised three or more months."³² For the individual parent, it suggests making very sure the boy is quite well advanced--as advanced as most of the girls--if the probability of success is to be maximized.

Other Factors as Criteria

Some research has been done on factors such as teething, vision, and even on size of wrist bone as indicators of physiological readiness. Thus, according to Ames, "slow teething tends to go along with slow development of behavior."³ Ogletree in his study of factors signifying school readiness stated: "Teething signifies that . . . the child is ready for academic training. He has had a change in mental development; he has crossed the bridge from the preoperational to the concrete levels of thinking As indicated, the change of teeth occurs at age seven as does transition between the preoperational and concrete operational levels of cognition."³¹ Please note, however, while these researchers indicate correlation, they imply no causal or cause and effect relationships.

Re visual development, Strang, in the sixties, wrote: "The children who cannot adjust to the difficulties and discomforts of close seeing find the visual task so difficult that they give up trying to read."³⁴ Gray, a highly respected reading specialist, wrote: "While infantile farsightedness decreases gradually with the growth and lengthening of the eyeball, some children do not develop the ability to focus on objects at close range until they are seven or eight years old."¹⁹ And, in the sixties, Halliwell and Stein concluded: "Certainly eye coordination may account for discrepancies in achievement between older and younger first-grade pupils"22

Barrett, about the same time, said: ". . . visual discrimination is still accepted as an important prerequisite and component of initial reading."⁶ And, according to Meyer, Hemphill, in his masters thesis of 1953, found a higher incidence of visual difficulties among the underage but accelerated than among the older children.²⁹ This was also reported by Ames in 1967.³ Moore and Moore even suggest that introducing children to structured reading tasks very early may be physically damaging.³⁰

However, once again, we have a criterion that is helpful but not sufficient. This was indicated as far back as the 1920's when Gates reported in the Journal of Educational Psychology as follows, according to Witty and Wilkins: "Mere physical status or maturity, then, however adequately measured, apparently does by no means gauge mental, educational, social, or emotional maturity satisfactorily. Classification of pupils alike in general physical status will not result in a satisfactory

classification on any other basis."³⁸ This same statement today can be applied to any single criterion. One must look at the cluster of criteria, at the total configuration of the child's development in making a decision and this includes looking at a number of his behaviors. Some schools have trained personnel who can check each child for how well he can copy certain forms as circles. They can administer the Incomplete Man Test, learning much from it, check visual development, administer the Wechsler Intelligence Scale for Children, ask the child to perform certain tasks as counting, even administer projective and achievement tests of one kind or another. From these, from speech and hearing records and health information, recommendations can be made that are best for the particular child.

Is the above costly? Yes, it is, and it is only as parents and citizens grasp the crucial importance of these resources for young children that they will be willing to pay for them.

However, even assuming the above has been done, there is one more task to be undertaken. Assuming the child's development on the factors mentioned seems to be average or even above for his chronological age, what then? Should he be entered in the first grade?

The wise parent will also look into the child's relative age, i. e., how he compares with the others in the situation into which he will be placed. As often as not today this will be a graded situation. There is recent but growing evidence to the effect

that the child's success is affected by his relationships to, and his standing in comparison with, the other children.³⁶ Translated into practical terms, for my own child I would far prefer him to be in the top third of his class physically, socially, emotionally, and in mental age than in the bottom third--especially during these sensitive formative years. I want him to be able to cope easily with the tasks with which he is confronted and with his peers so that his sense of adequacy, his confidence in himself, his sense of well-being, his willingness to venture will be enhanced. In short, I want him to have a strong self-concept. It is the self-confident, secure, emotionally stable, curious and "venture-some" child who is the one most likely to do well all through school, and it is during these early years that these feelings about self are developed. I can increase the probability of his being in this top third of his class by giving him another 6 months to a year of opportunity to grow before placing him in that first grade if it appears he is less mature than most of the others. And, of course, since all cannot be in the "top third" it is important for the teacher to arrange internal, flexible, small groupings that enable my child to be in the top third.

Teachers tend to operate in a relative milieu, and those children who are developing slowly for their age are most apt to be those labeled slow. The negative effects of labeling are increasingly well-known and understood--being most thoroughly documented in the splendid book by Hobbs entitled: The Futures of Children.²⁸

Why Do Parents Push?

It is interesting that in our society early development of children tends to be equated with precocity by millions of parents. Early crawling, early sitting up, early walking, early talking, etc., tend to be associated with intellectuality or "brightness." Actually, much of such early development is essentially motor in nature and correlates poorly with intelligence as measured by IQ tests at the age of 17 years.⁸

Couple the above with the fact that, at least among the mammals, man is the slowest to develop in most respects. For example, some mammals, as the gnu, can stand, walk, and even run within an hour of birth. The time required for gestation is only a few weeks for mice. The higher mammals, as the apes, typically reach puberty far sooner than man. Apparently, the more complex the organism, the more time required for development. Man is the most complex of all; he is the most helpless of all for the greatest length of time. He requires years to grow to maturity. Why then, this emphasis on being "first?" Is it because in our competitive society where it is assumed that the race is won by the swift that this concept has spilled over into our child rearing? I am not sure, but of one thing we can be sure: The most rapidly developing young child physically is not necessarily going to be the most bright at adulthood.

What to Do?

What then can the principal do? Frankly, in some instances, there will be very little he can do. Some parents have made up their minds and no amount of evidence to the contrary is going to persuade them to delay entry of their child. However, in numbers of instances, providing them with material to read on the subject will suffice to make the difference. If an elementary counselor is available, she can be of great assistance. And, of course, many schools now have pre-first grade clinics where the parents of kindergarten children are invited to learn about the factors indicating readiness for first grade, are enabled to raise questions, and can have their children screened.

Another thing the principal can do is to try to (over time) acquaint the parents and the community with the need for extremely small nongraded primary groupings. That is, the kindergarten-first-second grade teacher needs the smallest class size possible, preferably no more than 12 to 15 children to provide the individualized experiences they should have. As parents come to grasp the cruciality of these early years, they will become strong supporters for small class size.

The principal can also do something about the organization of his primary children. Not only can he and his faculty work through to the primary type of nongraded grouping such as K-1, 1-1½-2, or even K-1-1½, but, if the school is large enough, additional small temporary groupings can be formed within these containing children at similar stages of development.

These children can work and play together. When this is done, and the appropriate readiness experiences typically found in kindergarten are extended upward, the need for retention is, of course, reduced.

It is crucial that these children receive the readiness experiences that they need as long as they need them so that when they do enter the upper elementary grades they have acquired the skills (such as reading) demanded in order for them to be able to cope at those higher levels. The point is that these children must not be placed in situations where reading has become the tool for further learning until they can read. The research is clear that early retention is far better than is retention at the higher grade levels. The child who cannot read and is in the fifth grade, is tragically in great trouble. To be held back, to "flunk" at this age is a heavy blow to his self esteem--his feelings of worth.

Couple with the above the fact that it is crucial that elaborate support be provided these kindergarten and primary teachers for diagnostic data. These diagnostic services, plus information on health, vision, hearing, physical coordination, etc., should be brought together, studied, analyzed, and shared with the parents. Obviously, this is costly in time, personnel, and the clinical services required.

Unfortunately, of course, in many, many school systems these services are just not available and the probability is that they are not going

to be available in the foreseeable future. What then? And the class size is not going to become smaller, either. What about that?

In such cases, it would seem particularly advisable that numbers of these children be kept back in the kindergarten for a second and in a few cases even a third year--if the parents agree. Or, two years of kindergarten and two years of first grade or one year of kindergarten and two years of first grade. All good first grade teachers will tell you they provide a variety of kindergarten-type experiences for those children still needing them--unless the class is large when it becomes very difficult if not impossible. It is costly in time and personnel to hold children back.¹ However, the evidence is clear that it is even more costly not to hold them back.

Still another device used in some school systems--if they are graded--is collaboration by certain teachers across grades. Translated, this might mean that Joe, held back in first grade, is deemed ready by December to begin moving more and more over into the second grade. Initially, he may start going to the second grade room just for the reading group. As the second grade teacher works with him, she gradually takes him on for more and more of the day until, in a few months, he has moved over completely.

Summary

In conclusion, the difference between providing children with the stimulation they need,

whether in Head Start, Follow Through Programs, etc., and early forced structured reading experiences is a crucial one! The former are designed to enable optimum development of each child within his own framework of growth. The latter attempts to force early development in advance of the child's readiness. There is an absolutely vital difference here that should not be overlooked. Were there no strongly implanted "norms" mandating certain types of reading experiences for children in the first grade, the problem would resolve itself. For the present, at least, such is not the case; hence, the parent and principal and teacher can only collaborate to make what seems to be the best decision for each child at this early crucial period of his life.

The above is but a small part of the research reviewed. The basic document, which furnishes a comprehensive analysis of the literature, is in process of being edited and will be published during the coming year. Information about it can be obtained from the author by June of 1977. Information and recommendations for Florida are also available from the Florida Department of Education, Tallahassee, Florida 32304.

One last point concerns the Florida Legislature. If our legislators are indeed serious about rectifying the reading problems of our youngsters, then they must face up to several stark realities. It is not humanly possible for first grade teachers, no matter how skilled and how dedicated to provide the individual care and attention demanded given the present large class sizes. Nor is it possible for the first grade teacher to have the information she

needs about each child given the present paucity of resources for individual study and diagnosis of each child.

Therefore, the legislature must recognize that it is absolutely crucial that first grade class size be held to twelve to fifteen students per teacher and that trained elementary school guidance counselors be available to furnish them with the information they need to work out an individually planned program for each youngster. Coupled with the above is the need for further training of many elementary teachers so they can design these individual programs and be conversant with the methods and materials necessary to implement them.

The above is going to be costly. However, the evidence is clear that not to do this is equally, if not more costly in later years and, in many instances, the later efforts are too late to be very successful.

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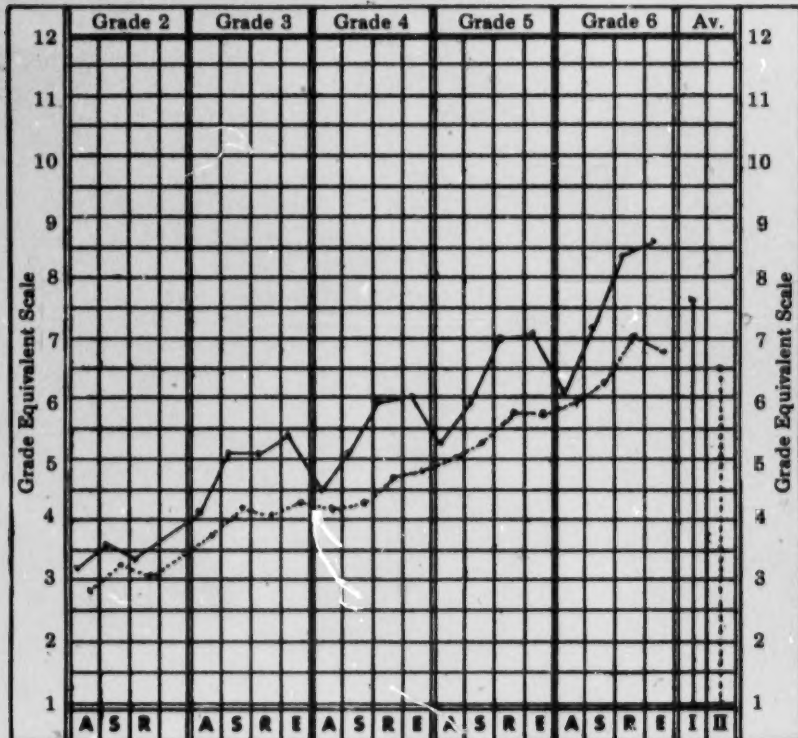
APPENDIX B

Indicative of what happens to underage versus the older child are the following graphs of achievement by 50 boys and 50 girls of normal age and underage matched by IQ and sex.

Fifty underage children and fifty normal age children were selected as a sampling for a comparative study of the achievement in elementary school subjects in grades two through six. The following criteria were used in the selection of these pupils:

1. The pupils enrolled in an Austin elementary school in September, 1947
2. The pupils attended the Austin elementary schools throughout the elementary grades and had complete records of Metropolitan Achievement Tests
3. Half of the pupils selected were six years old or over on September 1, 1947
4. The pupils were equally divided between sexes
5. The underage pupils were matched with normal age pupils of same sex and equal IQ as measured by the New California Short Form Test of Mental Maturity at the primary level

Mean of the Grade Equivalent Scores of the Fifty Girls



LEGEND:

Line — Normal Age Girls

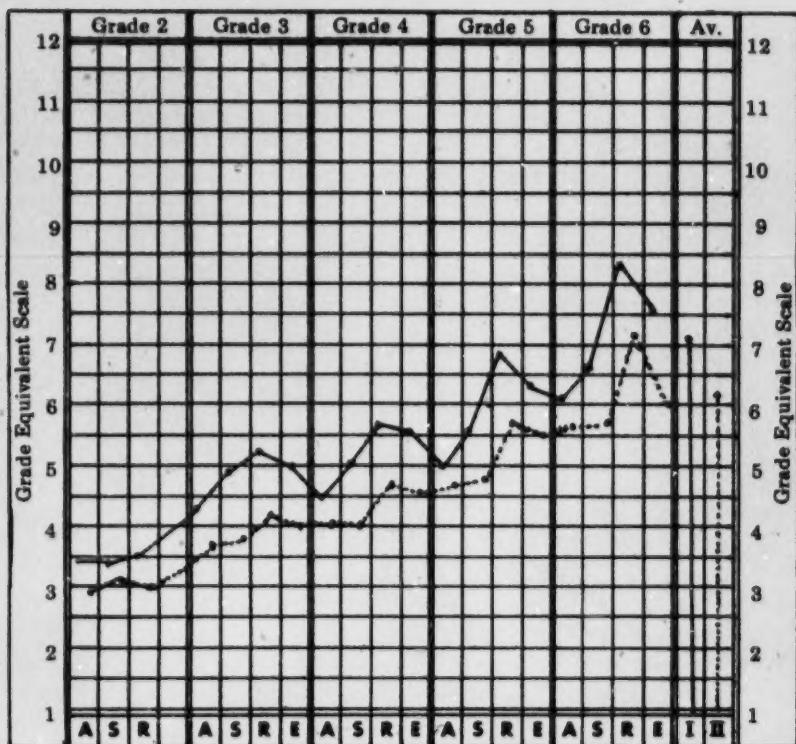
Broken Line -- Underage Girls

I - Mean of the grade equivalent scores of the sixth grade means of the normal age girls

II - Mean of the grade equivalent scores of the sixth grade means of the underage girls

A-Arithmetic; S-Spelling; R-Reading; E-English

Mean of the Grade Equivalent Scores for the Fifty Boys



LEGEND:

Line — Normal Age Boys

Broken Line --- Underage Boys

I - Mean of the grade equivalent scores of the sixth grade means of the normal age boys

II - Mean of the grade equivalent scores of the sixth grade means of the underage boys

Note: The above graphs were from "The Effect of Early School Entrance on the Scholastic Achievement of Elementary School Children in the Austin Public Schools." by Carter -- see Bibliography.

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